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MAGIC: Modularized signal Acquisition and Generation Concept

Platform for high-speed real-time low latency signal analysis and processing.



MAGIC is a new modular concept, a platform where it's possible to use different front-ends and signal generation back-ends. The platform consists of standardized modules: a proprietary carrier card and different modules (FMC). It fulfills all the High-Speed needs of today and tomorrow!

- Flexible – **MAGIC** is scalable and suits many different types of applications
- A state-of-the-art technology which guaranties future proof
- Standardized – With a standardized form factor, **MAGIC** suits many different types of applications and makes adaptations easier and cost effective.
- Compatible with other 3rd-party COTS FMC carrier boards

FMC module available

Data acquisition FMC module

- Four channel ADC 16 bits up to 130 MSps
 - IPMI support

TECH BRIEF

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Carrier Card

- Support for one FMC module (HPC)
- FPGA Xilinx SX50T (optional SX35T). FFG665
 - configuration through JTAG, on-board PROM or (optional) removable media
- Configuration support for FPGA on FMC module
- Up to 4 Gbit, 32-bit wide 300+ MHz DDR2 memory.
- 128 Mbit SPI FLASH
- On-board 125 MHz oscillator
- External interfaces
 - SFP Transceiver-cage connected to FPGA on CC
 - SFP Transceiver-cage connected to the FMC-module
 - SFP Transceiver-cage connected to either FMC or FPGA
 - PCIe 1-4 lane connector connected to FPGA on CC (electrically prepared for PCIe comm.)
 - Two SATA connectors (electrically prepared for SATA comm.)
 - HDMI type connector (to FPGA on the CC)
 - One RS232 and four additional RS-232 through USB
- Two mini-SD-card sockets for portable media, one for data storage and one for FPGA-configuration
- Stacking connectors for multiple Carrier-Cards to support multiple FMC-modules within one System
- Support for synchronization of multiple AD and DA FMC-modules
- Firmware for I/O-interface to FMC module
- Temperature monitoring through RS232
- Optional:
 - Navsync GPS-module GW25, for time stamping
 - SD-card IP
 - SATA IP
 - GbE (with SW stack and web server application)
 - IP for UDP "point-to-point-protocol" support for Ethernet
- Power supply requirement for CC and one FMC module, 10-14V DC